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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
100/751,516	12/29/2000	Vij Katesari M. Mudi	42390P10300	8841

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EXAMINER

KIANNI KAVEHC

ART UNIT PAPER NUMBER

2877

DATE MAILED 11/06/2002

Please find below and or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09-751,516

Examiner

Kevin C Kianni

Applicant(s)

MURALI VENKATESAN

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If no period for reply is specified above, the maximum statutory period will apply, and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED, 35 U.S.C. § 135.
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earlier patent term adjustment. See 37 CFR 1.174(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 24-30 is/are pending in the application.
- 4a) Of the above claim(s) 24-30 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and or 121.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Disposition of Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement (PTO-449) Paper No. \_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No. \_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_

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## DETAILED ACTION

1. Applicant's election of claims 1-10 without traverse and cancellation of claims 11-23 in paper No. 11 is acknowledged.

### *Specification*

#### 2. Content of Specification

A brief summary of invention is required:

- (f) Brief Summary of the Invention: See MPEP § 608.01(d). A brief summary or general statement of the invention as set forth in 37 CFR 1.73. The summary is separate and distinct from the abstract and is directed toward the invention rather than the disclosure as a whole. The summary may point out the advantages of the invention or how it solves problems previously existent in the prior art (and preferably indicated in the Background of the Invention). In chemical cases it should point out in general terms the utility of the invention. If possible, the nature and gist of the invention or the inventive concept should be set forth. Objects of the invention should be treated briefly and only to the extent that they contribute to an understanding of the invention.
- (g) Brief Description of the Several Views of the Drawing(s): See MPEP § 608.01(f). A reference to and brief description of the drawing(s) as set forth in 37 CFR 1.74.

### *Drawings*

3. The drawings are objected to because certain/essential numbered elements of the drawings in figures 1-12 are not labeled by names. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

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***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

5. Claims 1-2, 8 and 10 are rejected under 35 U.S.C. 102(e) as being anticipated by Adkins (US 6163233).

Regarding claim 1, Adkins teaches a multi-level waveguide (shown at least in fig. 1; see abstract) comprising: a first substrate 20 (col. 4, line 23) having a first opening therethrough (fig. 1, item 30; see col. 4, lines 61-64); a second substrate 22, attached to said first substrate 20, having a second opening therethrough 30 and aligned with the first opening in said first substrate (shown in fig. 1, item 30; see col. 4, lines 22 and 61-64); a transparent material inserted in said first substrate hole, and a transparent material inserted in said second substrate hole (see fig. 1, vias 30 etched/drilled through substrates 20 and 22; also col. 5, lines 4-6; wherein epoxy resin is transparent material).

Regarding claim 2, Adkins does not specifically teach wherein said transparent material is a gas. Nonetheless, inherently, the empty vias 30 contain air that contains gas such as oxygen and nitrogen. It is also conventional to insert specific gas to vias

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for purpose of producing a light source, as in reference US 6194833, is provided herein as prior art.

Regarding claim 8, Adkins further teaches a source of electromagnetic radiation attached to said first substrate (see col 6, lines 4-34).

Regarding claim 10, Adkins further teaches a conductive layer on said second substrate (see fig. 1, item 26).

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Adkins.

Regarding claim 9, Adkin teaches all limitations of claim 1. However, does not specifically teach wherein a detector of electromagnetic radiation is attached to said first substrate. Nonetheless, Adkin states that any circuit components can be attached to substrate layers (see col. 6, lines 44-51). Thus it is obvious to a person of ordinary skill in the art when the invention was made to modify Adkins multi-level waveguide (shown in fig. 1) by attaching a detector of electromagnetic radiation to it, since the resultant

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device would improve the system performance such as for controlling impedance signal tracks at different substrates (col. 1, line 66-col. 2, line 4).

8. Claims 3-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over combination of Adkins and Carey et al. (US 5219787).

Regarding claims 3-7, Adkins teaches all limitations of claim 1. However, Adkins does not teach wherein the said transparent material is cladding, grown on the inside of the substrate hole, it is comprised of an outer cladding and a separate inner transparent material, wherein transparent material is an optical fiber, wherein said first substrate is made of silicon, wherein said transparent material and said first substrate are made of the same material, a source of electromagnetic radiation attached to said first substrate, a detector of electromagnetic radiation attached to said second substrate. These limitations are taught by Carey. Carey teaches multiplayer substrate containing vias (shown at least in fig. 32; see abstract) wherein transparent material is an optical fiber (see fig. 32, item 158; see col. 61, line 61-col. 10, line 2; wherein cladding with a glass conductor is an optical fiber, also an optical waveguide containing cladding is an optical fiber, see col. 10, lines 14-25), wherein said first substrate is made of silicon (see col. 9, lines 6-18), wherein said transparent material and said first substrate are made of the same material (see figures 3 and 4, wherein the polyimide material 14 layer is same as the filled polyimide 24 in vias created in figurer 4). Thus, Carey provides flexibility in designing multi-level waveguides by altering the substrates materially or electronically and improving the over all system performance (col. 1, lines 50-59). Thus, it would

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have been it is obvious to a person of ordinary skill in the art when the invention was made to modify Adkins multi-level waveguide (shown in fig. 1) by combining Carey's teachings on optical materials in order to produce an optical system that includes the above limitations since the resultant device would improve the system performance such as for controlling impedance signal tracks at different substrates (col. 1, line 66- col. 2, line 4).

***Citation of Relevant Prior Art***

9. Prior art made of record and not relied upon is considered pertinent to applicant's disclosure. In accordance with MPEP 707.05 the following references are pertinent in rejection of this application since they provide substantially the same information disclosure as this patent does. These references are:

Adkins et al. 6072375 Teaches at least claim 1.

DeTemple et al. 6194833 Teaches inserting gas in via(s) of substrates

Tsukamoto et al. 6438281

Kim et al. 6355198

Koh 5761350

Fouquet et al. 5390210

These references are cited herein to show the relevance of the apparatus/methods taught within this reference as prior art.

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**Contact Information**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaveh Cyrus Kianni whose telephone number is (703) 308-1216.

The examiner can normally be reached on Monday through Friday from 8:30 a.m. to 6:00 p.m. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor,

Frank Font, can be reached at (703) 308-4881.

**Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks  
Washington, D.C. 20231

**or faxed to:**

(703) 308-7722, (for formal communications intended for entry)

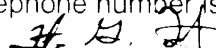
**or:**

(703) 308-7721, (for informal or draft communications, please label  
"PROPOSED" or "DRAFT")

Hand delivered responses should be brought to Crystal Plaza 4, 2021 South  
Clark Place, Arlington, VA., Fourth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application should be directed to the Group Receptionist whose telephone number is (703) 308-0956.

Kevin Cyrus Kianni  
Patent Examiner  
Group Art Unit 2877



Frank Font  
Supervisory Patent Examiner  
Group Art Unit 2877

October 23, 2002